Before The
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
	)	CC Docket No. 92-115
Revision of Part 22 of the	)	
Commission's Rules Governing	)	
the Public Mobile Services	)	

PETITION FOR RECONSIDERATION
OF
C-TWO-PLUS TECHNOLOGY, INC.

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December 19, 1994

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SUMMARY

C-Two-Plus Technology, Inc. ("C2+") respectfully requests reconsideration of those portions of the Commission's Report and Order in this proceeding purporting to prohibit the use of C2+ technology to enable a bona fide cellular subscriber to make and pay for calls from a second cellular phone which emulates the Electronic Serial Number ("ESN") of his or her primary cellular phone. Prohibiting the C2+ technology would do nothing to prevent cellular fraud, and instead would deprive bona fide cellular subscribers of substantial cost savings and desired service offerings and insulate the duopoly cellular carriers from competition.

There is no evidence that C2+ facilitates or contributes to cellular fraud. In contrast to the "cloning" or "tumbling" of ESNs -- which enables unauthorized users to steal cellular service by placing calls which either are billed to unsuspecting cellular subscribers whose ESNs have been cloned or are unable to be billed at all -- the sole purpose of the C2+ emulation technology is to enable a bona fide cellular customer to make and be billed for calls from a second cellular phone without requiring the customer to pay an additional monthly recurring service charge for that phone.

C2+ takes substantial precautions to ensure that its technology is not used for fraudulent purposes. The C2+ decryption devices operate only in conjunction with specific encryption/decryption keys provided by C2+ from its mainframe computer and will cause a cellular phone to become inoperable

after several unsuccessful attempts to program the phone without the proper encryption/decryption keys. Moreover, use of C2+ phones does not harm the cellular system and easily can be made compatible with fraud detection software used by the carriers.

In the absence of any evidence that the C2+ technology contributes to cellular fraud, the Commission apparently concluded that "use of C2+ altered cellular telephones constitutes a violation of the Act and our rules" because the "altered" phone allegedly does "not comply with the cellular system compatibility specification and thus may not be considered authorized equipment under the original type-acceptance." Report and Order at ¶62. However, there is no record support for these conclusions, which exceed the scope of the Commission's authority in this rulemaking proceeding in any event. Type-acceptance applies to the characteristics of the mobile unit's transmitter, not to the content of the information being transmitted. A properly obtained type-acceptance is unaffected by subsequent application of the C2+ emulation technology.

C2+ respectfully suggests that the Commission should reconsider the conclusions in Paragraphs 60-63 of its Report and Order and permit a bona fide cellular subscriber to use additional cellular phones which emulate the ESN of his primary phone under the limited conditions set forth in Section IV herein.

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Revision of Part 22 of the Commission's Rules Governing the Public Mobile Services	)	

PETITION FOR RECONSIDERATION

C-Two-Plus Technology, Inc. ("C2+") hereby petitions for reconsideration of those portions of the Commission's Report and Order, in CC Docket No. 92-115, 94-201 (rel. Sept. 9, 1994) ("Report and Order") purporting to prohibit the use of C2+ technology to enable an authorized cellular subscriber to make and pay for calls from a second cellular phone which emulates the Electronic Serial Number ("ESN") of his or her primary cellular phone. Prohibiting the C2+ services will deprive legitimate cellular subscribers of substantial benefits and cost savings without providing any additional protection against cellular fraud.

Preliminary Statement

C2+ has developed its own encryption technology which, when used in conjunction with its decryption device (the "NAM Emulation Programming Device" or "NEPD"), enables C2+ to program a second cellular phone purchased by a bona

fide cellular subscriber to "emulate" the ESN of the customer's primary cellular phone. The sole purpose of such "emulation" is to enable the customer to make -- and be billed for -- calls from either phone, without requiring the customer to pay a separate monthly recurring service charge for the second phone. Cellular carriers currently require a customer desiring to use more than one cellular telephone to pay a separate recurring monthly subscription fee for each phone or a recurring service charge of approximately $20 to $40 per month for a "two phones/one phone number" service. Such recurring monthly charges are in addition to the charges for each call made from the second phone.

Although no carrier even suggested it in this proceeding, the Commission apparently has determined that the cellular carriers are "entitled" to these additional "monthly per telephone revenues." Report and Order at ¶60. Consequently, in the course of its discussion of the anti-fraud measures embodied in new rule Section 22.919,[1] the Commission, has attempted to outlaw the C2+ technology despite the absence of any record evidence that C2+ facilitates the types of "cloning" or "tumbling" fraud identified by the Commission and the cellular carriers. Report and Order at ¶62. Specifi-

[1] Section 22.919 requires, among other things, that: (a) each cellular phone in service must have a "unique ESN;" (b) the ESN be "factory set" by the manufacturer and not "alterable, transferable, removable or otherwise able to be manipulated;" and (c) "any attempt to remove, tamper with, or change the ESN chip, its logic system, or firmware originally programmed by the manufacturer will render the mobile transmitter inoperative."

cally, the Commission concluded that "the use of C2+ altered cellular telephones constitutes a violation of the Act and our rules" and that "any...company that knowingly alters cellular telephones to cause them to transmit an ESN other than the one originally installed by the manufacturer is aiding in the violation." Id.

The Commission did not seek to prohibit the C2+ technology based on any finding that it facilitates or contributes to cloning or tumbling fraud or that it would violate the provisions of Section 22.919. In fact, that rule does not become effective until January 1, 1995 and applies only to cellular phones initially type-accepted after that date. Report and Order at ¶¶62, 112. However, with respect to the more than 20 million existing cellular phones in the United States -- and countless additional phones not yet manufactured but already type-accepted -- the Commission apparently has determined that ESN modification is permissible when performed by the carrier or with the carrier's authorization (Id. at ¶60), but is unlawful in every instance when performed by C2+ because the "altered" phone does "not comply with the cellular system compatibility specification and thus may not be considered authorized equipment under the original type-acceptance." Id. at ¶62.

C2+ respectfully suggests that there is no record support for these findings in the Report and Order and that they exceed the scope of the Commission's authority in the context of this rulemaking proceeding in any event. Pro-

hibiting the C2+ technology does nothing to prevent cellular fraud and serves only to deprive consumers of substantial cost savings and to eliminate the limited competition which C2+ services provide to the services offered by the cellular carriers. On reconsideration, the Commission should vacate the findings against C2+ in Paragraphs 60-63 of the Report and Order and permit a cellular customer to use additional phones which emulate the ESN of his primary cellular phone under the limited conditions set forth in Section IV, herein.

I. A Cellular Customer Using A Second Phone Which Emulates The ESN Of His Primary Cellular Phone Does Not Commit Cellular Fraud.

The Commission and the cellular carriers have identified two primary "categories of fraud unique to the cellular industry" against which Section 22.919 is designed to protect:[2]

> First, "counterfeiting" or "cloning" is fraud perpetrated by stealing valid subscriber information to complete unauthorized calls...[by programming the stolen information] into another cellular phone on an unauthorized basis.

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[2] Other types of cellular fraud identified by the Commission and the carriers include subscription fraud (use of false information to subscribe to the carrier's service in order to avoid payment) and stolen phone fraud (use of stolen phones to make calls before service is terminated). See Policies and Rules Concerning Toll Fraud, CC Docket No. 93-292, 8 FCC Rcd. 8618 (1993) at ¶33 ("Toll Fraud NOPR"). However, the carriers have indicated that these types of fraud are "outside of the FCC's jurisdiction." See Comments of the Cellular Telecommunications Industry Association ("CTIA") in CC Docket No. 93-292, filed Jan. 14, 1994 at 5. For convenience, comments and replied filed in that proceeding will be referred to herein as "Toll Fraud" comments and replies.

> Second, "tumbling" refers to the fraudulent user's alteration of the ESN or MIN [Mobile Identification Number] before each call, either on a random or systematic basis...exploiting the cellular industry's typical billing and collection practices when a customer "roams" outside his or her home market.

Toll Fraud Comments of McCaw Cellular Communications, Inc. ("McCaw") at 4;[3] see also Toll Fraud NOPR at ¶33. The sole purpose advanced to support the adoption of Section 22.919 is the prevention of such cellular fraud. Report and Order at ¶¶54, 58. However, the Report and Order also would outlaw certain services, including those provided by C2+, which are pro-consumer, pro-competitive and clearly not fraudulent.

A. There Are Legitimate, Non-Fraudulent Reasons For Modifying The ESN Of A Phone Used By A Bona Fide Cellular Customer.

The Report and Order proceeds from the erroneous assumption that any alteration of the ESN of a cellular phone must be intended to facilitate fraudulent use of that phone. Specifically, the Commission stated that "the ESN enables the carriers to bill properly for calls made from the telephone" and that "[a]ny alteration of the ESN renders it useless for this purpose." Report and Order at ¶54. However, the Commission simply ignored substantial record evidence of at least

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[3] Cellular carriers "historically have permitted" roaming calls to be completed while the carrier searched "national databases to determine the validity of the ESN/MIN and associated account information," a process which can "take 15 to 30 minutes." McCaw Toll Fraud Comments at 5. "By tumbling a phone appears to the cellular system as a new roamer each time it places a call with a new ESN/MIN," enabling the caller to complete calls before the authorization process has a chance to invalidate the false account information. Id.

two instances in which such modification or "emulation" of the ESN of a cellular customer's phone facilitates billing, benefits the consumer, and reduces the likelihood of fraud.

First, cellular telephone manufacturers argued that responsible ESN modification is an efficient, cost-effective means of restoring defective equipment without requiring significant down-time for the cellular customer or increasing the likelihood of fraud. See Reply Comments of Motorola, Inc. ("Motorola") at 2; Reply Comments of The Ericsson Corporation ("Ericsson") at 2-3.[4] In fact, C2+ has provided such a service to certain cellular customers whose primary phones have malfunctioned. See Affidavit of Stuart F. Graydon, attached hereto as Exhibit 1 ("Graydon Aff.") at ¶1. Second, C2+ argued that enabling an authorized cellular customer to make and be billed for calls from a second cellular phone which emulates the ESN of his primary phone is pro-consumer, pro-

[4] For example, a defective car-mounted unit would have to be removed from the car, returned to the factory for repair or modifications, shipped back to the customer and reinstalled in the car, a process which could take weeks or months during which the customer would be paying for cellular service that he could not receive. See Ericsson Reply Comments at 3. A more efficient alternative would be to install a replacement phone which emulates the ESN of the original phone until the original can be repaired and returned. Id. at 3-4; Motorola Reply Comments at 2. If anything, this process actually reduces the likelihood of fraud by not putting into service another ESN which might be cloned or otherwise accessed fraudulently while the primary phone is being repaired.

competitive and does not increase the incidence of fraud.[5] C2+ Comments, filed Apr. 20, 1993 at 1-3.

Clearly, the examples cited by Motorola, Ericsson and C2+ do not involve or facilitate cellular fraud. First, in contrast to "cloning," and "tumbling," C2+ does not provide its service to an "unauthorized user." As set forth below, C2+ takes substantial precautions to ensure that its services are provided only to bona fide cellular subscribers. Second, C2+ does not program an "unauthorized," "counterfeit," "stolen" or "random" ESN into a customer's phone. Rather, at the written request of an authorized customer of a cellular carrier, C2+ programs the customer's secondary phone to emulate the ESN of his primary phone, using information provided voluntarily by the customer on an authorization form required by C2+ from each customer. Finally, contrary to "cloning" and "tumbling," in which the user seeks "to complete unauthorized calls" for which the carrier cannot bill and collect, a C2+ customer using a phone programmed to emulate the ESN of his primary phone ensures that all calls made from the second phone will be billed to his account. As the Commission has

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[5] In addition, responsible ESN modification or emulation is a cost-effective remedy for a legitimate cellular customer who has been victimized by cellular fraud. When the customer's ESN/MIN/SID [System Identification Code] information has been stolen and is being used to make unauthorized calls, the carrier usually terminates service to that account to stop the fraudulent use. A business customer is then forced to reprint business cards, letterhead and promotional materials which included the terminated cellular telephone number. However, by modifying his ESN, the customer can maintain his existing cellular telephone number and terminate fraudulent use of the stolen ESN.

recognized, the very purpose of the ESN is to enable the carrier "to bill properly for calls made from the telephone." Report and Order at ¶54.

Nevertheless, the Commission made no attempt to distinguish the services identified by the manufacturers and C2+ -- which clearly benefit consumers, increase legitimate cellular usage, and do not involve the types of "cloning" and "tumbling" fraud identified by the carriers -- and to exclude them from the scope of its anti-fraud regulation.[6] By prohibiting these services, the Commission would provide no additional protection against cellular fraud and instead would simply deprive consumers of significant cost savings.

B. C2+ Takes Substantial Precautions To Ensure That Its Technology Is Not Used Fraudulently.

C2+ has been in business for over four years. During that time, it has not learned of a single instance in which one of its customers has engaged in fraudulent use of cellular service and no cellular carrier has ever advised C2+ that a phone programmed by C2+ has been used fraudulently. See Graydon Aff. at ¶11. Although several carriers specifically identified C2+ in their comments and urged the Commis-

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[6] For example, the Commission rejected the proposal of Motorola and Ericsson to permit ESN modification in authorized service centers outside the factory because the "computer software to change ESNs...might become available to unauthorized persons through privately operated computer bulletin boards." Report and Order at ¶61. However, there is absolutely nothing in the record in this proceeding to support such speculation.

sion to prohibit its emulation technology, no carrier claimed that an existing cellular customer making and paying for calls over a C2+ secondary phone was engaging in fraud.

C2+ takes substantial precautions to ensure that its customers are authorized, paying cellular subscribers. For example, each C2+ customer must:

1. Complete an application form providing the customer's name, address and landline telephone number;

2. Certify that he is the user authorized by his cellular carrier for the primary ESN which is to be emulated, and/or provide C2+ or its authorized representative with a copy of a recent bill for cellular service; and

3. Provide C2+ or its authorized representative with a driver's license or some other visual form of identification.

See Graydon Aff. at ¶8.

In addition, C2+ modifies only the ESN, not the MIN or the SID of the customer's phone. Before using a C2+ extension phone, a customer must either program the MIN and SID information into the phone himself or take the phone to a dealer to program that information. Without that additional information, the C2+ extension phone is inoperable. See Graydon Aff. at ¶9.

Some carriers have argued that even though the C2+ "devices or other technology may have appropriate uses," and "even where the[ir] stated purpose...is allegedly legitimate" they should be prohibited because they "can be readily subverted in order to facilitate fraudulent telecommunications usage." McCaw Toll Fraud Reply Comments at 14; see also

Mobile Phone News, March 22, 1993 at 1 (quoting Eric Hill, CTIA's director of security, as stating that, although the C2+ "product has advantages...[i]n the hands of the wrong people [it] could wreak havoc."). However, there is no evidence that the C2+ technology "can be readily subverted."

Although it has been implied that C2+ simply markets "equipment that emulates ESNs" (Report and Order at ¶57; McCaw Toll Fraud Comments at 9), C2+ does no such thing. It provides authorized dealers with a decryption device which is useless without the "keys" used in the C2+ encryption technology. Those "keys" are maintained in a mainframe computer under strict security by C2+. The NEPD device will cause a cellular phone to "lock-up" long before a working ESN can be programmed at random by an unauthorized third party without the encryption/decryption "keys" provided by C2+. See Graydon Aff. at ¶4.

In fact, C2+ provided the CTIA Fraud Task Force with one of its decryption devices. CTIA tried to use the device without the C2+ encryption "keys" to program a phone to emulate a working ESN, ostensibly to test whether the decryption device could be used by unauthorized persons to steal cellular service. CTIA was unable to successfully emulate a working ESN and, during its efforts to do so, the phone "locked up" and had to be restored with the assistance of the manufacturer. Thus, there is no evidence that unauthorized persons could use the C2+ decryption device without the encryption "keys" to steal cellular service, and C2+ uses the keys only

for bona fide cellular customers desiring to emulate the ESN of their primary phone. See Graydon Aff. at ¶3-8.[7]

C. The C2+ Technology Easily Can Be Made Compatible With Anti-Fraud Software.

Finally, some carriers have claimed that their fraud detection procedures cannot distinguish between a C2+ user and a "counterfeiter" cloning the number of an unsuspecting cellular customer. See McCaw Toll Fraud Comments at 11 ("legitimate use of the phones created with the C2+ device cannot be distinguished from use of illegitimate counterfeit phones"); Mobile Phone News, March 22, 1993 at 3 (according to CTIA, the carriers' "main concern" over the use of the C2+ technology is that it may inhibit a cellular operator's ability to "weed out the good customer from customers committing fraud.") In addition, the Commission has speculated that absent the carrier's permission:

> Simultaneous use of cellular telephones fraudulently emitting the same ESN without the licensee's permission could cause problems in some cellular systems such as erroneous tracking or billing.

Report and Order at ¶60. However, there is no basis for the Commission's speculation regarding potential billing problems, and the C2+ technology can easily be made compatible with anti-fraud tracking software.

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[7] In any event, the possibility that a product or service might be misused is alone insufficient to support its prohibition. The cellular fraud problem readily demonstrates that the technology and equipment used by the cellular carriers are being "subverted in order to facilitate fraudulent telecommunications usage" every day, but no one suggests that cellular service should be prohibited for that reason.

By the Commission's own admission, a cellular customer who authorizes C2+ to program a second phone to emulate the ESN of his primary phone "makes it impossible for the cellular system to distinguish between the two telephones." Report and Order at ¶59. The second phone functions exactly like any other cellular phone, except that it emits the ESN of the customer's primary phone, specifically to enable the carrier "to bill properly for calls made from the [second] telephone." Id. at ¶54. Thus, there simply is no basis for the Commission's speculation regarding potential billing problems.

The C2+ technology easily can be made compatible with cellular system anti-fraud tracking software. Some fraud detection software identifies instances in which two cellular phones are using the same ESN/MIN/SID code and terminates service to those phones. Other fraud detection software will terminate service where it appears that the same mobile unit has placed calls from two geographically distant locations within a time frame which is insufficient for travel between those two locations, assuming that one of the units must be an unauthorized clone. C2+ has proposed a simple solution to this problem and has offered to provide carriers with the information necessary to establish a database enabling the carriers' system software to check the list of legitimate C2+ users before terminating service pursuant to the system's fraud detection procedures. Thus, any "tracking" problem easily could be eliminated, preserving the consumer benefits inherent in the C2+ service. However, carriers have refused

to assure C2+ that they would not use the database to terminate service to all C2+ emulation phones.[8]

II. The C2+ Technology Offers The Most Efficient And Economical Means To Meet The Substantial Demand For Cellular "Extension" Service.

Cellular consumers have indicated a substantial demand for services which would enable them to use additional cellular telephones without requiring a different telephone number for each phone. Aside from the inconvenience of having multiple telephone numbers, consumers are reluctant to pay the additional monthly service charges assessed by carriers for each additional phone. C2+ has estimated that thirty to forty percent of cellular subscribers would purchase and use a second cellular phone if they did not have to pay a second recurring monthly service fee. See Graydon Aff. at ¶2. The C2+ technology offers the most efficient and cost-effective means to meet the substantial demand for "extension" cellular telephone services.

A. Carriers Either Cannot Offer Extension Service Or Require Unnecessary Recurring Monthly Charges For That Service.

The Commission's Report and Order recognizes that absent use of the emulation technology developed by C2+, many

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[8] C2+ supports a requirement that customers seeking to use C2+ extension phones must register with their carrier and would support a nominal charge to offset the carrier's cost of maintaining that database. The consumer would be substantially better off paying such a nominal charge rather than the second monthly subscription charges currently required by the carriers. Moreover, by reducing the number of ESNs in service, the potential for fraud would be reduced.

cellular systems are incapable of offering "extension" phone service, i.e. two cellular phones using the same telephone number:

> It is not technically necessary to have the same ESN in order to have the same telephone number. Nevertheless, the authentication software used by some cellular systems does not permit two cellular telephones with the same telephone number. In such cases, cellular carriers should explain to consumers who request this service that their system is not yet capable of providing it.

Report and Order at ¶59 n.107. Thus, the Commission would simply deny service to customers of these cellular systems rather than allowing those customers to use the C2+ technology.

Other systems have begun to offer a "two phones/one number" service in response to the substantial consumer demand for cellular "extension" service. These systems use switching software to allow two phones with different ESNs to share the same cellular telephone number. Report and Order at ¶59; see also Mobile Phone News, March 22, 1993 at 2 (regarding Bell Atlantic service). However, the carriers offering this service require customers using their cellular extension phones to pay an additional recurring monthly service charge of approximately $20 to $40. See Exhibit 2, hereto, which includes promotional materials regarding the "2 phones/1 number" service now offered by BellSouth Mobility and the "FlexPhone" service now offered by Cellular One.[9] The C2+

[9] Under either the C2+ method or the carriers' service, the customer's second phone operates in a manner similar to a landline "extension" phone, i.e. calls made from either phone

technology provides substantially similar service without requiring the customer to pay such unnecessary additional monthly charges.

B. The C2+ Technology Offers Greater Flexibility To Cellular Subscribers.

The C2+ technology offers other benefits to consumers in addition to the fact that they need not pay a second monthly recurring charge for their extension phone. For example, the carriers' "two phones/one number" service normally does not permit the customer to make calls using the secondary phone outside of the carrier's service area.[10] Thus, the carrier's method of providing extension service clearly does not comply with the cellular compatibility standards, the very purpose of which is "to ensure that a mobile station can obtain service in any cellular system." See Cellular Communications Systems, 86 FCC 2d 469, 578 (1981). Contrary to the carriers' claims (see, e.g. McCaw Toll Fraud Comments at 10 n.7), a customer using the C2+ technology can roam with either phone because both use the

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are billed to the customer's account, but both phones cannot be used to make calls simultaneously. Consequently, C2+ and the carriers offering "extension" service instruct customers that only one phone can be used at a time with this service.

[10] Some carriers apparently will make arrangements for the secondary phone to roam, but require a separate authorization and/or a separate activation fee each time the subscriber desires to make use of that service. See Exhibit 2 hereto (FlexPhone service requires 48 hour advance registration prior to roaming with secondary phone; BellSouth authorizes only one phone to roam and requires a $30 charge each time the designated roaming phone is charged).

same ESN which the carrier registers with national authorization databases.

In addition, the services offered by the carriers rely on switching software to combine two phones with different ESNs onto a single cellular telephone number. Currently, carriers offering extension service allow only two or three phones to be used in this service. See Exhibit 2. (BellSouth service limited to two phones; "FlexPhone" service limited to three phones and subject to higher monthly service charge). The C2+ technology allows a cellular customer to use multiple phones without paying additional recurring monthly service charges.

C. Carriers Should Not Be Permitted To Require Customers To Pay A Second Monthly Recurring Charge To Obtain "Extension" Service.

The Commission has readily acknowledged that under "the cellular duopoly market structure" it is "difficult to conclude that the cellular service market is fully competitive" because existing services and new services which "have the potential to compete with cellular" do not "currently constrain facilities-based cellular carriers from acting anti-competitively." Bundling of Cellular Customer Premises Equipment and Cellular Service, 7 FCC Rcd. 4028 (1992) at ¶11. Absent modification, the Commission's Report and Order will leave consumers desiring cellular extension service with no choice but to subscribe to the carrier's service, pay the

additional monthly charges and forego the flexibility of roaming with their extension phones.

Although the Commission indicates that consumers could use the C2+ technology if they receive "the permission of the relevant cellular licensee" (Report and Order at ¶60), the carriers clearly have substantial financial incentives to deny such permission because the C2+ technology eliminates the unnecessary monthly recurring charges which they impose for their service. The Commission offers no support for its conclusion that cellular carriers "are entitled" to the additional "monthly per telephone revenues" for the customer's second telephone. Id. at ¶60. Landline telephone companies are not "entitled" to such "monthly per telephone revenues" and the Commission has failed to explain why cellular carriers should be treated differently. See, e.g. Cellular Communications Systems, 86 FCC 2d 469 (1981) at ¶59 n.65 ("We have found no compelling reason to treat cellular mobile equipment differently from landline customer premises equipment..."). The Commission should not permit the cellular carriers to impose additional monthly per telephone charges based solely on the number of phones the customer chooses to use. Moreover, in other instances in which non-competitive service providers have sought to impose recurring monthly charges for additional service outlets provided to an existing customer, the Commission has acted to limit such charges to the actual cost of providing the additional outlet. See, e.g. Implementation of Sections of the Cable Television Consumer Protec-

tion and Competition Act of 1992, Rate Regulation, 8 FCC Rcd. 5631 (1993) at ¶307 n.747 ("Congress intended that residential customers will generally be able to obtain the additional connections they need with one primary service outlet charge.").

III. The C2+ Technology Does Not Adversely Affect The Type-Acceptance Of A Mobile Unit.

As early as 1956, the Commission and the courts recognized a telephone subscriber's "right reasonably to use his telephone in ways which are privately beneficial without being publicly detrimental." Hush-A-Phone Corp. v. U.S., 238 F.2d 266, 269 (D.C. Cir. 1956). C2+ respectfully suggests that the same principles support the use of its encryption technology to permit a cellular subscriber to make and pay for cellular calls using a secondary phone which emulates the ESN of his primary phone.

There is no evidence that C2+ phones are "publicly detrimental." The Commission provides no record support for its conclusion that "cellular telephones with altered ESNs do not comply with the cellular system compatibility specification and thus may not be considered authorized equipment under the original type-acceptance." Report and Order at ¶62. The C2+ ESN emulation cannot adversely affect type-acceptance because type-acceptance applies to the mobile unit's transmitter, not to the information being transmitted.

The Commission previously has stated that compliance with the cellular compatibility standards for mobile units "is regulated as part of the type-acceptance requirement on cel-

lular transmitters." Cellular Communications Systems, 54 RR2d 375 (1983) at ¶1 (emphasis added). The type-acceptance rules require "that manufacturers apply existing technical standards to such devices and obtain...type-acceptance...prior to shipment or distribution of such devices for sale." Radio Frequency Devices, 23 FCC 2d 79 (1970) at ¶8 (emphasis added). Once granted, type-acceptance "attaches to all units subsequently marketed by the grantee which are identical...to the sample tested, except for permissive changes or other variations authorized by the Commission." See 47 C.F.R. §2.905. Clearly, if the ESN were essential to type-acceptance, the "identical" requirement would dictate that all phones marketed by the grantee must have the same ESN.

In addition, Section 2.932 of the Commission's Rules states that a new application for equipment authorization is required only when "there is a change in the design, circuitry or construction of an equipment or device for which an equipment authorization has been issued." The C2+ technology does not alter the design, circuitry or construction of the customer's mobile unit. Graydon Aff. at ¶3. Thus, if the manufacturer properly obtained type-acceptance of that unit, nothing that C2+ does would require reauthorization of that unit.

Even if the Commission considered application of the C2+ technology to be a change in "design, circuitry or construction," that change clearly falls within the scope of a Class I permissive change under Section 2.1001 of the Rules,

for which no filing with the Commission is required. Application of the C2+ technology to a type-accepted mobile unit does not "change the equipment characteristics beyond the rated limits established by the manufacturer and accepted by the Commission" when type-acceptance was first granted. See 47 C.F.R. §2.1001(b)(1). Likewise, C2+ does not "change the type of equipment" for which type-acceptance initially was granted. Rather, after application of the C2+ technology the customer's cellular phone "is electrically and mechanically interchangeable and in addition...[has] the same basic...semiconductor line up, frequency multiplication, basic frequency determining and stabilizing circuitry, basic modulator circuit and maximum power rating" as it had before application of the C2+ technology. See Graydon Aff. at ¶3. In short, application of the C2+ technology to a cellular telephone does not affect the type-acceptance of the transmitter, it merely changes the information being transmitted.

Finally, if the Commission concludes that application of the C2+ technology invalidates the type-acceptance and converts an otherwise licensed cellular phone into an unlicensed transmitter because it no longer complies with cellular compatibility specifications, then that cellular phone never complied with the compatibility specifications, should not have been type-accepted in the first place, and was an unlicensed transmitter from the outset. Among other things, the cellular compatibility specifications state that: (a) the ESN must be "factory-set and not readily alterable in the

field;" (b) the ESN circuitry "must be isolated from fraudulent contact and tampering;" and (c) "attempts to change the serial number circuitry should render the mobile station inoperative." See Cellular Communications Systems, 86 FCC 2d 469, 593 (1981). C2+ respectfully submits that its technology does not affect the ESN circuitry in violation of these standards. However, if the Commission concludes otherwise, it must also conclude that because the mobile unit's ESN was "readily alterable" and "not isolated from tampering," and because the unit was not capable of rendering itself inoperable, it did not comply with those specifications from the outset. In short, if "use of the C2+ altered cellular telephones constitutes a violation of the Act and our rules" (Report and Order at ¶62), the Commission must also conclude that the manufacturers of those phones have violated the Act and the Commission's rules by marketing cellular telephones which failed to comply with the compatibility standard.

IV. The Public Interest Would Be Better Served By Allowing ESN Emulation Under Certain Conditions Which Would Minimize The Potential For Fraud.

The Commission should distinguish between a bona fide cellular customer using a secondary phone which emulates the ESN of his primary phone in order to facilitate billing of all calls made from that phone and unauthorized users of cellular phones employing stolen or random ESNs to facilitate fraudulent use of cellular service. C2+ respectfully suggests that the Commission can preserve the consumer benefits